CLAIMS

1. A hand-held power saw for cutting a work piece, comprising in combination:

a frame assembly;

a handle assembly extending from a longitudinal edge of said frame assembly and oriented at an acute angle relative to said frame assembly;

a motor assembly having a drive shaft and mounted to said frame assembly;

a drive wheel assembly connected to said drive shaft of said motor assembly;

a driven wheel assembly journaled to said frame assembly distant from said drive wheel, said drive wheel and said driven wheel adapted to support a continuous loop blade thereon; and

a blade break assembly mounted to said frame assembly.

2. The hand-held power saw as defined in claim 1, further comprising a battery pack detachably coupled to the hand-held power saw for providing power to said motor assembly.

3. The hand-held power saw as defined in claim 1, further comprising a guide assembly attached to said frame for orienting a section of the continuous loop blade at an angle within five degrees of said acute angle said handle assembly is relative to said frame assembly.

4. The hand-held power saw as defined in claim 1, further comprising a cam assembly connected to said driven wheel assembly for translating said driven wheel assembly between a first and a second position relative to said drive wheel assembly.

5. The hand-held power saw as defined in claim 1, further comprising a fence depending from said frame assembly for resting against the work piece being cut.

6. The hand-held power saw as defined in claim 1, further comprising a switch assembly operably interconnecting said battery pack to said motor assembly.

7. The hand-held power saw as defined in claim 1, wherein said frame assembly comprises a first and a second end, and a throat area intermediate said first and second end along a longitudinal edge opposite said handle assembly.

8. The hand-held power saw as defined in claim1, wherein said handle assembly comprises an integral portion of said frame assembly.

9. The hand-held power saw as defined in claim 1, wherein said handle assembly comprises a D-shaped handle attached to said frame assembly.

10. The hand-held power saw as defined in claim 1, wherein said handle assembly comprises an L-shaped member attached to said frame assembly.

11. The hand-held power saw as defined in claim 1, wherein said handle assembly further includes a cantilevered structure adapted to receive a battery pack.

12. The hand-held power saw as defined in claim 1, wherein said motor assembly comprises:

a motor housing;

a motor disposed within said housing and having an output shaft;

a transmission coupled to said output shaft of said motor and having a drive shaft; and

a gear assembly attached to a free end of said drive shaft.

13. The hand-held power saw as defined in claim 1, wherein said drive wheel assembly comprises:

a pulley journaled to said frame assembly; and

a driven gear connected to said pulley and adapted to be engaged by said motor assembly.

14. The hand-held power saw as defined in claim 3, wherein said guide assembly comprises

a first and a second guide arm each having a first end attached to said frame assembly and a second end proximate said section of the continuous loop blade;

at least one bearing member attached to said second end of each of said first and second guide arm adapted to engage at least one side of the continuous loop blade.

15. The hand-held power saw as defined in claim 4, wherein said cam assembly comprises

a carriage slidably disposed within said frame assembly and journaled to said driven wheel assembly;

a biasing member disposed between an end of said carriage and said frame assembly for urging said carriage toward one end of said frame assembly;

a cam member engaging an end of said carriage opposite that engaging said biasing member; and

a handle attached to said cam for rotating said cam and moving said carriage between a first and a second position

16. A saw for cutting a work piece using a continuous loop blade, comprising:

a frame having a first and a second end;

a throat defined within said frame intermediate said first end and said second end;

a driven wheel journaled to said frame;

a drive wheel journaled to said frame and spaced from said driven wheel, said drive wheel supporting the continuous loop blade;

a motor mounted to said frame;

a transmission interconnecting said motor to said drive wheel; and

a handle assembly extending from said frame intermediate said first and said second ends, and substantially opposite said throat, said handle assembly oriented at an angle relative to said frame such that a section of the continuous loop blade spanning said throat lies in a plane generally parallel to said handle assembly.

17. The saw as defined in claim 16, further comprising a power supply coupled to said handle assembly.

18. The saw as defined in claim 16, further comprising at least one blade guide assembly mounted within said throat for orienting said section of the continuous loop blade generally parallel to said handle assembly.

19. The saw as defined in claim 16, further comprising a blade tensioning assembly connecting said driven wheel to said frame.

20. The saw as defined in claim 16, further comprising a skirt depending substantially around said frame.

21. The saw as defined in claim 16, further comprising a fence connected to one portion of said throat for engaging the work piece.

22. The saw as defined in claim 17, wherein said power supply comprises at least one of a battery pack and an electrical cord.

23. The saw as defined in claim 18, wherein said at least one blade guide assembly comprises a bracket attached to said frame, and

at least one bearing attached to an end of said bracket for engaging a side of the continuous looped blade.

24. The saw as defined in claim 19, wherein said blade tensioning assembly comprises a carriage for translating said driven wheel along an axis parallel to a longitudinal axis of said frame.

25. The saw as defined in claim 18, where said at least one blade guide assembly comprises two blade guide assemblies spaced from each other at opposite ends of said throat for engaging at least one side of the continuous looped blade and twisting the continuous looped blade a predetermined angle relative to said frame.

26. A hand-held band saw, comprising:

a frame having a first end and a second end and a length greater than a width which is greater than a height, and having a throat extending inwardly of said frame from a first longitudinal side intermediate said first and second ends;

a tensioning assembly mounted in sliding engagement to said first end of said frame;

a first wheel journaled to said tensioning assembly adapted to engage a portion of a continuous loop blade to be mounted thereon;

a transmission assembly mounted to a second end of said frame;

a second wheel journaled to said second end of said frame and coupled in drive relationship to said transmission assembly adapted to engage said portion of the continuous loop blade to be mounted thereon;

an electric motor coupled to said transmission assembly for providing power through said transmission assembly to said second wheel;

a handle extending from a second longitudinal side of said frame intermediate said first and second ends and at an angle relative to said frame; and

a battery having a battery housing, said battery housing being removably attached to and disposed on said handle with provision for electrically coupling said battery to said electric motor.

27. The saw as defined in claim 26, further comprising a first and a second blade guide mounted on opposite sides of said throat for twisting a segment of the continuous loop blade to a predetermined angle.

28. The saw as defined in claim 26, further comprising a fence attached to said frame within said throat for engaging a work piece.

29. The saw as defined in claim 26, further comprising a skirt depending around substantially all of said frame but for said throat to permit the continuous loop blade to engage a work piece.

30. The saw as defined in claim 26, wherein said frame is fixed at a predetermined angle relative to said handle.

31. The saw as defined in claim 26, wherein said battery housing is coupled to said handle proximate said first end of said frame.

32. The saw as defined in claim 26, wherein said battery is rechargeable having a chemistry selected from the group of nickel cadmium, nickel metal hybride, lithium, and lead-acid.

33. A portable cordless band saw comprising:

a C-shaped frame having a length greater than a width which is greater than a height and having a first and a second ends;

a primary handle extending from a longitudinal edge of said C-shaped frame intermediate said first and second ends and disposed at an angle relative to said C-shaped frame;

a battery pack detachably coupled to said handle;

a drive assembly attached to one end of said C-shaped frame, and operably coupled to said battery pack; and

a longitudinally translatable driven assembly attached to an opposite end of said C-shaped frame;

wherein said drive and driven assemblies are adapted to receive a continuous loop blade thereon such that a portion of the continuous loop blade traverses across a throat area defined by said C-shaped frame.

34. A method for cutting a work piece, comprising the steps of:

providing a saw body having a throat defined along one edge for receiving the work piece and a handle extending from an edge of said body at an angle relative to said body and opposite said throat area,

providing a continuous-loop blade along one side of said saw body such that a section of said continuous-loop blade traverses said throat;

grasping the handle of the saw with one hand such that the body of the saw lies at said angle relative to said handle;

energizing the saw to cause the cutting blade to rotate;

directing the saw to locate the throat adjacent the work piece; and

engaging the work piece with said cutting blade along a predetermined line to be cut.

35. The method as defined in claim 34, further comprising the step of orienting a section of said cutting blade traversing said throat to lie in a plane about parallel to a plane of said handle.

36. The method as defined in claim 34, further comprising the step of automatically breaking said cutting blade when said cutting blade is fatigued.

37. The method as defined in claim 34, further comprising the step of breaking said cutting blade when said cutting blade is displaced a predetermined distance.

37. The method as defined in claim 34, further comprising the step of depressing a safety switch prior to energizing the band saw.

38. The method as defined in claim 34, further comprising the step of engaging the work piece with a fence depending from said body of said saw to stabilize the work piece.